IN THE CLAIMS:

Listing of the claims:

1. (Original) A signal processing system comprising a plurality of input channels, sampling means adapted to obtain a first signal sample from at least a first of the plurality of input channels at a first time and a second signal sample from a second of the plurality of input channels at a second time, switching means for switching said sampling means between input channels, and processing means for processing said signal samples, the processing means being arranged to generate an output suitable for sending to beamforming means, said output being related to at least one weighting co-efficient associated with at least one of said input channels and being generated using an iteration of an error minimisation routine executed by the processing means using said first signal sample to cause a first output at a first time and using said second signal sample to cause a second output at a second time wherein the sampling means is arranged to sample each input channel in a predetermined order and the processing means is arranged to determine an input channel which makes a significant contribution to a gradient of an error function and to use a signal from said channel in the error minimisation routine

2. (Original) A system according to claim 1 wherein an input channel making significant contribution to the gradient of the error function constitutes an input channel, which when ranked by contribution to the gradient of the error function, is within any one of the following top percentiles of the sampled signals: 1%, 5% 10%, 25%, 50%.

3. (Currently amended) A system according to ~~either of~~ claims 1 ~~or 2~~ wherein the sampling means include at least one ADC.

4. (Currently amended) A system according to ~~any preceding~~ claim 1 wherein there are provided a maximum of four sampling means.

5. (Currently amended) A system according to ~~any preceding~~ claim 1 wherein the switching means is arranged to switch between input channels either in a predetermined order or randomly.

6. A system according to ~~any preceding~~ claim 1 wherein there are provided a maximum of half the number of sampling means as there are input channels.

7. A system according to ~~any preceding~~ claim 1 wherein the sampling means is arranged to sample the at least one input channel at the end of a symbol period.

8. A system according to ~~any preceding~~ claim 1 wherein the processing means is arranged to determine which input channel has the largest contribution to the gradient of the error function and use the signal from said channel in the error minimisation routine.

9. (Original) A method of signal processing comprising the steps of:
a method of signal processing comprising the steps of:

i) sampling a sample signal of a subset of a plurality of input channels;

ii) reducing an error function using said sample, using digital processing means;

iii) switching between the subset and another subset of the plurality of input channels using switching means, or resampling the same subset as in step (i); and

iv) determining which of the input channels make significant contributions to a gradient of the error function and switching to a subset of the plurality of input channels including at least one of said channels prior to step (iii).

10. (Original) The method of claim 9 including defining an input channel making significant contribution to the gradient of the error function constitutes an input channel, which when ranked by contribution to the gradient of the error function, is within any one of the following top percentiles of the sampled signals: 1%, 5% 10%, 25%, 50%.

11. (Currently amended) The method of ~~either of~~ claims 9 ~~or 10~~ including repeating steps (i) to (iii), iteratively, in order to obtain a minima in the error function.

12. (Currently amended) The method of ~~either of~~ claims 9 ~~to 11~~ including generating at least one weighting coefficient associated with the subset of input channels based upon the result of the reduction of the error function.

13. (Currently amended) The method of ~~any one of~~ claims 9 ~~to 12~~ including providing fewer ADC's than there are input channels for step (ii).

14. (Currently amended) The method of ~~any one of~~ claims 9 ~~to 12~~ including switching between the subsets of channels between that are selected either in a predetermined order or randomly at step (iii).

15. (Currently amended) The method of ~~any one of~~ claims 9 ~~to 13~~ including determining, at step (iv), which of the input channels makes the largest contribution to a gradient of the error function and switching to said channel prior to step (iii).

16. (Currently amended) A telecommunications system including a signal processing system according to ~~any one of~~ claims 1 ~~to 8~~ wherein the telecommunications system is a WLAN.

17. (Original) A system according to claim 16 wherein the signal processing system is an access point that is arranged to spatially null a network element from a piconet.

18. (Currently amended) A method of increasing the number of users that can access a telecommunications channel of a given bandwidth incorporating the method of ~~any one of~~ claims 9 ~~to 15~~.

19. (Original) An adaptive filter comprising a plurality of input channels, a switch, a processor, said switch being arranged to switch a subset of said input channels in and out of operative communication with the processor such that said processor processes sample signals from different channels at different times.

20. (Original) A filter as claimed in claim 19 wherein the processor is arranged to process said sample signals so as to create respective adaptive profile of weighting coefficients for each respective of said input channels.

21. (Currently amended) A filter as claimed in ~~either of~~ claims 19 ~~or 20~~ wherein there is provided an ADC intermediate said switch and said processor.

22. A filter according to claim 19 wherein the switch is arranged to switch which input channels are connected to the ADC.

23. (Original) A method of adaptive filtering comprising obtaining a sample signal, or signals, from a plurality of channels and using the sample signals to form at least one weighting coefficient for at least one of the channels, the weighting coefficients being obtained by performing an error function reduction iteration associated with the difference between the sampled signal, or signals, and a reference values, the error function being reduced by operating on a sample signal, or signals, from a subset of the available channels that is smaller than the number of available channels, and changing the channel, or channels, present in the subset between at least two iterations of the reduction of the error function.

24. (Original) The method of claim 23 including providing switching means to switch between subsets of channels.

25. (Currently amended) The method of ~~either of~~ claims 23 ~~or 24~~ including providing a subset of channels that is significantly smaller than the total number of channels.